

# Introduction to the Climate Adaptation Knowledge Exchange (CAKE)



Jessica Hitt  
EcoAdapt



## **Objectives**

- Build the field of Adaptation
- Build capacity
- Support implementation

## **Program Areas**

- Status of Adaptation
- Climate Adaptation Clearinghouse (aka CAKE)
- Climate Camp
- Implementation Support

# cake

Climate Adaptation  
Knowledge Exchange



[www.CAKEX.org](http://www.CAKEX.org)

Your online adaptation destination

A joint partnership by EcoAdapt and Island Press



# Why make a CAKE?



- Adaptation is a nascent and disparate field
- Too much reinventing, not enough innovating
- Top-down field that needs bottom up development
  - needs a philosophical framework
  - needs an approachable, findable set of tools, information, case studies, & practitioners



# What are the Pieces of CAKE?

- Case Stud
- Virtual Li
- Directory
- Commun
- Tools Sec



## Unique Features of CAKE

- Georeferenced Database
- Cross referenced
- Highlighting not replicating existing effort
- Outreach on both ends (populating and use)
- Focus on building the community to build the field
- Approachable content

**cake**  
Climate Adaptation Knowledge Exchange

SIGN IN | REGISTER | MY ACCOUNT | ABOUT | HELP

CASE STUDIES | VIRTUAL LIBRARY | DIRECTORY | TOOLS | COMMUNITY

### The Ocean and Climate Change: Tools and Guidelines for Action

**Case Study:**  
On the ground climate adaptation action

**Virtual Library:**  
Information to support your

**Directory:**  
People and organizations adapting to climate change

### SEARCH CAKE

Click on the map or type in the search box below.

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Display results in a: ☒ List ☐ Map

### NEW TO ADAPTATION?

Need help? **Start here.**  
We'll get you on the right track.

**DON'T PANIC!**

### GET INVOLVED

Want to get more out of CAKE than we can possibly put into it? See what other users are talking about in the CAKE community!

**In The Forums:**

**July 4th: Workshop 22: Climate adaptation knowledge exchange: building an...**  
By: Kate | June 14, 2010

**Sign up for the CAKE community:**

Stay up-to-date with what's new, participate in the discussion and connect with other users.

[Sign up now](#)

**Submit your own case study:**

Working on your own adaptation project you think others could learn from? Want to get ideas for your next steps?

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### ADVICE COLUMN

**Paper or Plastic?**  
By: Jennie  
March 26, 2010

Dear Adaptation Mavens,

I have finally come to accept that climate change is altering the bog in which I work,...

[Read more.](#)

**Adaptation: Now more than ever**  
By: laura  
March 15, 2010

Ah, Copenhagen. We pinned our hopes and dreams on that Scandinavian city, and our hearts have been broken. They were not broken...

[Read more.](#)

### What is CAKE?

A project of Island Press and EcoAdapt.

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Upload a case study and get free ice cream!

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**Directory**

**Virtual Library**

**Case Studies**

**Tools**

**Georeferenced Database**

**Text search**

**Adaptation Basics**

**Advice Column**

**Become a part of the CAKE community**

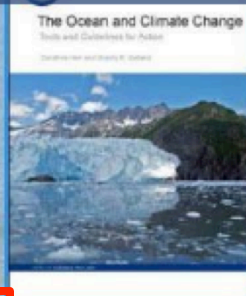
You can use CAKE in a number of ways to find the people and information you need.

You might start with a question about a particular impact of climate change...

## **What can I do about sea level rise?**

Find a case study to help you develop ideas

## The Ocean and Climate Change: Tools and Guidelines for Action



## SEARCH CAKE



Click on the map or type in the search box below.

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### Case Study:

On the ground climate  
adaptation action



### Virtual

### Library:

Information to support your



### Directory:

People and organizations  
adapting to climate change

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[Read more.](#)



### Adaptation: Now more than ever

By: Iara  
March 15, 2010

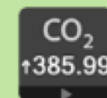
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Map Satellite

**Alligator River National Wildlife Refuge/Albemarle-Pamlico Peninsula Climate Adaptation Project**

**Organization(s):** [The Nature Conservancy, U.S. Fish and Wildlife Service](#)

The Alligator River National Wildlife Refuge is located in Dare and Hyde Counties, North Carolina, in the Albemarle-Pamlico Estuary. This pilot project...

[Read More](#)

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## CASE STUDIES

### About the Case Studies

The Case Study Database profiles on the ground adaptation projects and links to complete project information.

[Read more](#)

### Search Case Studies

Search the CAKE Library for all Case Studies relevant to climate adaptation. You can search by text or location (map).

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[List all](#)

### Submit a Case Study

Do you have a case study that you'd like to submit? Send it to the CAKE Editors.

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### What do you think?

Is there a case study that you think CAKE should include in their database? If so, fill out this form with your recommendation.

[Recommend](#)

## FEATURED CASE STUDY



### Alligator River National Wildlife Refuge/Albemarle-Pamlico Peninsula Climate Adaptation Project

March 8, 2010

The Alligator River National Wildlife Refuge is located in Dare and Hyde Counties, North Carolina, in the Albemarle-Pamlico Estuary. This pilot...

[Read more.](#)

## WHAT'S NEW

### Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise

June 22, 2010

The Scenic Hudson Land Trust is conserving properties along the Hudson River to buffer future sea level rise impacts, engaging with the...

[Read more.](#)

Search in case studies for the text "sea level rise"

Sort results by list or map



Home | [sea level rise](#) | Project | Content

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CASE STUDIES

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## Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise

June 22, 2010

Land Trust is conserving properties along the Hudson River to buffer future **sea level rise** impacts ... of greater frequency and more intense flood events and **sea level rise**. To target and prioritize land ... scenic value, biological or ecological significance, and vulnerability to **sea level rise**. Essential ...

Document Type

Rating

View Map



## Sea Level Rise and the Construction of the Confederation Bridge in the Gulf of Saint Lawrence

April 29, 2010

to facilitate transportation needs and accommodate for a one meter **rise** in **sea levels** over 100 years ... to accommodate travelers, ocean vessels, and an expected one meter in **sea level rise** ... Transportation/Infrastructure **Sea level rise** ...

Document Type

Rating

View Map



## The South Florida Sea Level Rise Project

April 19, 2010

CAKE Staff **Sea Level Rise** ... Regional Planning Council (SFRPC) completed the **Sea Level Rise** Project in 2005. The study examined the effects of **sea level rise** on seven coastal counties under the purview of the SFRPC and the Treasure Coast ...

Document Type

Rating

View Map



## Delaware Sea Level Rise Adaptation Initiative

March 29, 2010

) is working on a **Sea Level Rise** Initiative. Scientists and managers are working to compile information ... collected and the progress on a statewide **Sea Level Rise** Adaptation Plan

Document Type

Rating

View Map



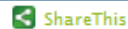
Home | Case Studies | Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise



## Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise

PRINT | DOWNLOAD

Submitted by [kfeifel](#) on June 22, 2010



**Sacha Spector**  
Scientist--natural  
[sspector@scenichudson.org](mailto:sspector@scenichudson.org)

**Scenic Hudson**  
1 Civic Center Plaza, Suite 200  
Poughkeepsie, NY, 12601  
United States



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★★★★★

### Project Summary / Overview

The Scenic Hudson Land Trust is conserving properties along the Hudson River to buffer future sea level rise impacts, engaging with the public through education and outreach projects to encourage low-carbon development patterns, and is engaging with policymakers to update coastal management regulations in anticipation of greater frequency and more intense flood events and sea level rise. To target and prioritize land acquisitions, the land trust used GIS to integrate criterion based upon scenic value, biological or ecological significance, and vulnerability to sea level rise. Essential to their efforts has been partnerships and collaboration with state and local governments and other NGOs; communication with partners has enhanced organizational capacity, avoided project redundancy, and aligned regional efforts.

### Project Background

The Scenic Hudson Land Trust initially became interested in climate change when staff began looking into carbon sequestration and other carbon-based markets as an additional income source for their land holdings. After completing an analysis, it was determined that the land trust is not large enough and does not have the proper vegetation cover to act as a marketable carbon sequestration site.

As climate change became a more prominent issue at the land trust, the land trust's board became energized by the number of climate related initiatives in the state of New York that the land trust could participate in. In particular, the Nature Conservancy launched "Rising Waters", a stakeholder participation process throughout the entire Hudson River Valley to assess the community's vulnerability to sea level rise, which also means multiple state level and local level efforts.

### CASE STUDIES

#### Search Case Studies

Search the CAKE Library for all Case Studies relevant to climate adaptation. You can search by text or location (map).

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Opportunities

#### External Source/Attribution

- Scenic Hudson website

Read more  
about a  
particular  
case study

### Case Study Components:

- ☐ Project Summary/ Overview
- ☐ Project Background
- ☐ Project Implementation
- ☐ Project Outcomes and Conclusions



Home | Case Studies | Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise



## Scenic Hudson Land Trust: Prioritizing lands in light of sea level rise

PRINT | DOWNLOAD

Submitted by kfaifel on June 22, 2010



**Sacha Spector**

Scientist--natural  
sspector@scenichudson.org

**Scenic Hudson**

1 Civic Center Plaza, Suite 200  
Poughkeepsie, NY, 12601  
United States



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Opportunities

#### External Source/Attribution

• Scenic Hudson website

through a 10 step program to create a community based climate change plan and audit process.

### Project Background Keywords

**Habitat/Biome Type:** Wetland | Estuarine | Rivers and Streams (year round) | Grassland | Forest | Aquatic - Freshwater | Aquatic - Mixed | Terrestrial

**Type of Adaptation Action/Strategy:** Incorporate future conditions into restoration planning and policies | Natural Resource Management/Conservation | Increase/Improve public awareness, education, and outreach efforts | Conduct/Gather additional research, data, and products | Enhance migration corridors and other connectivity measures | Design reserves to allow for inland, altitudinal, or latitudinal movement | Initiate targeted research program | Capacity Building

**Jurisdiction:** Community/Local

**Natural Resource Focus:** Freshwater | Terrestrial

**Climate Type:** Temperate

**Sociopolitical Setting:** Rural | Suburban

**Sector Addressed:** Conservation/Restoration

**Motivating Driver:** Perceived threats to conservation or management work | Perceived funding/other economic opportunities

**Target Impacts:** Biodiversity loss | Erosion | Flooding - coastal | Habitat loss | Loss of species of concern | Phenological shifts | Sea level rise

### Project Implementation

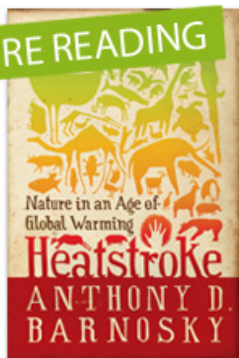
Climate change has become a central issue for Scenic Hudson land trust. Staff focus outreach and education efforts by engaging constituents during climate change related talks throughout the

Or you might be interested in a particular management problem...

## What's a water manager to do?

How can I find other management plans to get me started?

WE'RE READING



## READ ALONG WITH US!

Each month, download a new chapter of

### *Heatstroke* *Nature in an Age of Global Warming*

by Anthony Barnosky

FEATURED DOCUMENT



#### The Ocean and Climate Change: Tools and Guidelines for Action

By: Dorothée Herr and Grantly R. Galland

Published: November 02,

2009

The ocean continues to get only peripheral attention in climate change research and policy, despite its enormous importance in regulating global...

[Read more.](#)

WHAT'S NEW

#### Climate Change Adaptation Implications for Drought Risk Mitigation: A Perspective for India

By: S. V. R. K. Prabhakar and Rajib Shaw

Published: October 10, 2007

Abstract:

There is a growing evidence that the climate change do has implications for drought vulnerable...

[Read more.](#)

#### Assessing Mitigation-Adaptation Scenarios for Reducing Catastrophic Climate Risk

By: Chad Settle and Jason F. Shogren and Sally Kane

Published: May 16, 2007

Abstract:

Countries can use both mitigation and adaptation strategies to protect their citizens from...

VIRTUAL LIBRARY

#### About the Virtual Library

The destination for quality-confirmed literature and information focusing on adaptation relevant to your adaptation planning.

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Search the CAKE Library for all documents relevant to climate adaptation. You can search by text or location (map).

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## Part I: Existing Conditions Report of the District's Watershed Management Plan

kfeifel | March 12, 2010

/Local (part existing conditions report the district **watershed management plan**) (Article, Community ... -05-07 <http://www.slvwd.com/watershed> ... conditions of **watershed** property in the context of the San Lorenzo River **watershed** ...

Document Type



Rating



View Map

## Québec and Climate Change – A Challenge for the Future; 2006–2012 Climate Change Action Plan

kgraves | March 15, 2010

**Management Plan** ... /Provincial, **Management Plan**) ... <http://www.mddep.gouv.qc.ca/changements/plan> ...

Document Type



Rating



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## The New Hampshire Climate Action Plan A Plan for New Hampshire's Energy, Environmental and Economic Development Future

programs | March 10, 2010

**Management Plan** ... and Policy, Infrastructure, **Planning**, and Development, Natural Resource **Management**, State/Provincial, Transportation/Infrastructure, Water resources, Wildlife, **Management Plan**) ...

Document Type



Rating



Staff Pick!

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## Climate Change Risk Management Strategy for Halifax Regional Municipality

Rachel | March 9, 2010

**Management Plan** ... : <http://www.halifax.ca/climate/documents/ClimateChangeRiskManagement> ... Maps (climate change risk **management** strategy for halifax regional municipality) (**Management** ...

Document Type



Rating



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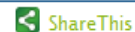
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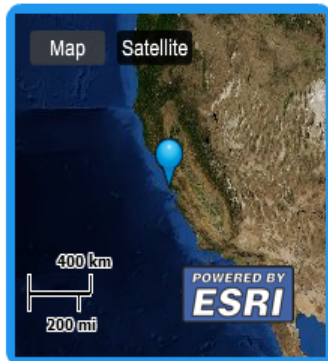
## Part I: Existing Conditions Report of the District's Watershed Management Plan

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San Lorenzo Valley Water District and **Betsey Herbert**  
May 07, 2009



Link <http://www.slvwd.com/watershed.htm>



### Abstract

This document represents the most current information available to the District about the natural and historic conditions of watershed property in the context of the San Lorenzo River watershed.

#### Additional Document Information

Document Type: [Article](#)

Habitat/Biome Type: [Forest](#) | [Freshwater](#)

Tools: [Historical Analysis](#)

Sector Addressed: [Water Resources](#)

Jurisdiction: [Community/Local](#)

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- Incorporating climate change into the San Lorenzo watershed management plan

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Read about case studies associated with that item

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## Incorporating climate change into the San Lorenzo watershed management plan

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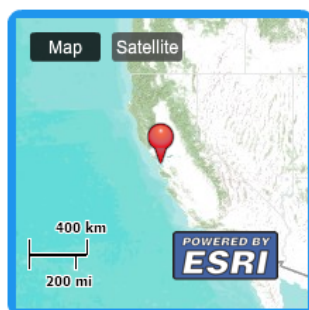
kfeifel | December 8, 2009

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**Betsey Herbert**  
[bherbert@slwd.com](mailto:bherbert@slwd.com)

**San Lorenzo Valley Water District**  
13060 Highway 9  
Boulder Creek, CA, 95060  
United States



### Project Summary / Overview

In 2008, the Board of the San Lorenzo Water District approved a climate change resolution that commits the District to reducing greenhouse gas emissions and considering the impacts of climate change in all planning documents. The 2009 Master Water Supply and Management Plans discuss how climate change will impact local water resources. Climate change is expected to cause drier and shorter wet seasons regionally making water conservation and efficiency priorities for water managers.

### Project Background

In April, 2008, the San Lorenzo Water District (SLWD), in collaboration with nearby water districts, sponsored a local forum titled "Tools for addressing climate change and local water resources." The forum addressed three key questions: 1. What are the potential impacts of climate change on local water resources? 2. How can local water managers plan for these impacts? 3. How can local water agencies reduce their carbon footprint? After the forum concluded, the SLWD Board of Directors approved a climate change resolution mandating that all future documents and plans properly address the impacts, mitigation opportunities, and adaptation strategies to climate change. To assess the vulnerability of the SLWD to future climate change, the District first turned to global climate models to ascertain predicted regional changes. The climate models presented a drier and shorter wet season with a 3o to 10oF increase in annual temperatures by 2100. These findings indicate that the total amount of water available state-wide will decrease, water demand will increase, and the timing of water availability will be altered. To design a water management plan capable to adapt to climate change, the SLWD reanalyzed historical hydrological conditions and water production records dating to 1984 over which time period the SLWD incurred two droughts. This analysis was then extrapolated to 2030 to infer the potential effects of climate change on water resources, assuming that future climate variability reflected historical norms. By 2030, without any supplemental water resources, the Southern Service area of the SLWD may not have enough water to fulfill water resource demands. However, it is expected that the Northern Service will be more resilient to climate impacts, thus if the Northern and Southern Service areas could be connected (an "Intertie"),

## CASE STUDIES

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- [Part I: Existing Conditions Report of the District's Watershed Management Plan](#)
- [SLWD Water Supply Master Plan May 2009](#)

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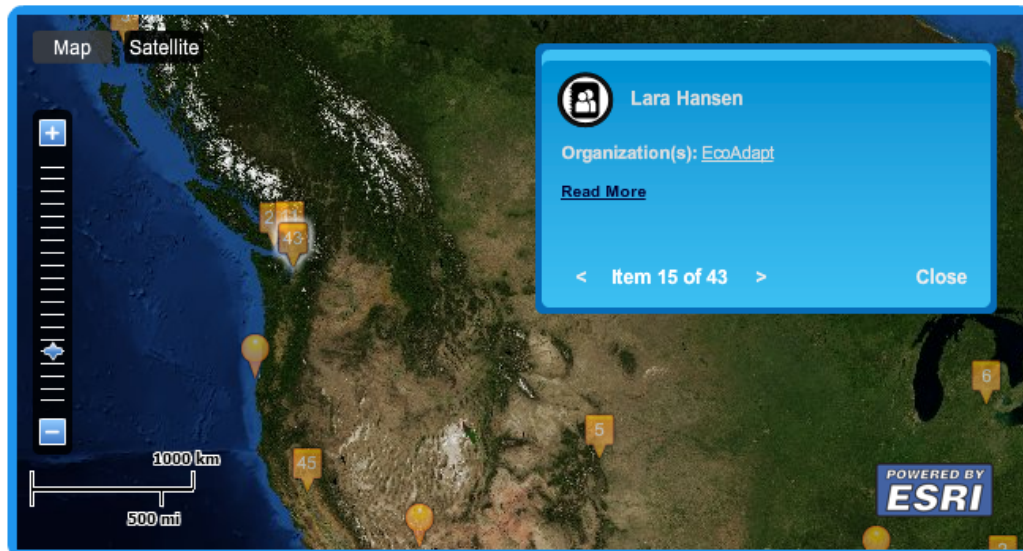
- [San Lorenzo Valley Water District website](#)

Or you might want to find a  
particular person...

I need help!!!

How can I find an adaptation specialist to help  
me?





## DIRECTORY

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Is there a person or organization that you think CAKE should include in their directory? If so, fill out this form with your recommendations.

## FEATURED ORGANIZATION

### Ducks Unlimited

By: admin

Post date: January 7, 2010

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## NEW MEMBERS

### Augustin Basabose

By: Anonymous

March 22, 2010

[Read more.](#)

### Isabella Masinde

By: Anonymous

March 22, 2010

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## Jennie Hoffman

March 29, 2010

**Hoffman** jennie ... -reviewed scientific papers, Dr. **Hoffman** is author or co-author of several books and reports, including Climate ... -818-4678 (jennie **hoffman**, jennie **hoffman**, jennie **hoffman**, jennie **hoffman**) (NGO) ...

Document Type

Rating

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## Katrina Hoffman

January 9, 2010

Katrina **Hoffman** kathoff ... ° 17' 30.8112" W See map: Google Maps (katrina **hoffman**) ...

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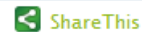


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**Jennie Hoffman**

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**Email Address**

[jennie@ecoadapt.org](mailto:jennie@ecoadapt.org)

**Organization**

EcoAdapt



Jennie first investigated the biological effects of global change in 1992, when she joined a project looking at the effects of ozone depletion on Antarctic sea urchin embryos. She has since expanded her work to include interactive effects of warming and ultraviolet radiation on marine organisms, climate change vulnerability assessment, and adapting conservation and natural resource management to a changing climate. In addition to her peer-reviewed scientific papers, Dr. Hoffman is author or co-author of several books and reports, including *Climate: The Force That Shapes Our World* and *The Future of Life on Earth*, and *Buying Time: A User's Manual for Building Resistance and Resilience to Climate Change in Natural Systems*. The User's Manual led to the development of Climate Camp workshops, a participant-driven process to help resource managers, conservation practitioners, and others create strategies to reduce the vulnerability of their work to climate change. Jennie has helped lead multiple Climate Camps for participants from around the globe. She earned her Ph.D. at the University of Washington in Ecology and her undergraduate degree in geology and biology from Brown University. After five years of working with the WWF-International Climate Change Programme's Impacts and Adaptation group as a consultant and employee, Jennie joined with Lara Hansen and Eric Mielbrecht to start a new non-profit, EcoAdapt, focused on climate change adaptation.

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**CAKE Documents**

- [Adapting Conservation and Management to Climate Change: An Overview](#)
- [Buying Time: A User's Manual to Building Resistance and Resilience to Climate Change in Natural Systems](#)
- [Designing Climate-Smart Conservation: Guidance and Case Studies](#)
- [Unnatural Disaster: Global Warming and Our National Parks](#)

Read more about an expert, and get contact information

...or you might just want to see what  
adaptation projects are going on near  
you...

I don't know where to begin.

Are there any efforts already underway near me that  
I can partner with?

## Alligator River National Wildlife Refuge/Albemarle-Pamlico Peninsula Climate Adaptation Project



### Case Study:

On the ground climate adaptation action

### Virtual Library:

Information to support your adaptation effort

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By: Lara  
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Delaware Sea Level Rise Adaptation Initiative

Town of Bowers Beach, Delaware Coastal Resiliency Action Plan

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## Town of Bowers Beach, Delaware Coastal Resiliency Action Plan



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### Project Summary

As part of their statewide Sea Level Rise Adaptation Initiative, the Delaware Coastal Programs Office of the Division of Soil and Water Conservation in the Delaware Department of Natural Resources and Environmental Control (DNREC) is helping the Town of Bowers Beach to conduct a vulnerability assessment and develop a coastal resiliency action plan to prepare for and adapt to sea level rise and other projected climate change impacts. This pilot implementation project will examine the coastal hazards risks to the Town of Bowers Beach, identify issues of concern, collect relevant information, and develop adaptation strategies.

### Project Overview

The Delaware Coastal Programs Office is a joint effort between the Division of Soil and Water Conservation and the Division of Coastal Management. The office's mission is to provide technical assistance and guidance to local governments and organizations in the state of Delaware to help them prepare for and adapt to sea level rise and other projected climate change impacts. The office is currently working on a number of projects, including the Town of Bowers Beach Coastal Resiliency Action Plan.

### Project Impacts

There are four planned or anticipated impacts of the project. The first is to provide technical assistance and guidance to the Town of Bowers Beach in the development of a coastal resiliency action plan. The second is to provide technical assistance and guidance to the Town of Bowers Beach in the development of a vulnerability assessment. The third is to provide technical assistance and guidance to the Town of Bowers Beach in the development of a coastal resiliency action plan. The fourth is to provide technical assistance and guidance to the Town of Bowers Beach in the development of a vulnerability assessment.

1. Data collection and analysis: The project will collect and analyze data on coastal hazards, including sea level rise, storm surge, and erosion. This data will be used to develop a vulnerability assessment and a coastal resiliency action plan.
2. Vulnerability assessment: The project will conduct a vulnerability assessment to identify the coastal hazards risks to the Town of Bowers Beach. This assessment will take into account the physical, social, and economic vulnerabilities of the town.
3. Coastal resiliency action plan: The project will develop a coastal resiliency action plan that outlines the steps that the Town of Bowers Beach should take to prepare for and adapt to sea level rise and other projected climate change impacts. This plan will include measures to reduce vulnerability, such as beach nourishment and dune restoration, and measures to increase resilience, such as building sea walls and elevating buildings.
4. Implementation: The project will implement the coastal resiliency action plan, including the construction of sea walls and the elevation of buildings. This implementation will be done in a phased manner, with the most vulnerable areas being addressed first.

### Project Outcomes

An adaptation action plan for Bowers Beach, Delaware. The plan and outline targeted on land rise, coastal erosion

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## Town of Bowers Beach, Delaware Coastal Resiliency Action Plan

Submitted by [Rachel](#) on March 29, 2010

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